SAGAR INSTITUTE OF SCIENCE,TECHNOLOGY AND RESEARCH BHOPAL

MINOR PROJECT

Hybrid Power with Solar and Wind
(for small house in Rural Area)

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UNDER THE GUIDANCE OF:-

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Abstract

- This project presents a new system configuration of hybrid wind/solar energy system for power generation.

- This configuration allows the two sources to supply the load separately or simultaneously depending on the availability of the energy sources.

Environmental friendly & Sustainable energy sources

- Environmentally friendly solutions are becoming more prominent than ever as a result of concern regarding the state of our deteriorating planet.
- With increasing concern of global warming and the depletion of fossil fuel reserves, many are looking at sustainable energy solutions to preserve the earth for the future generations.

- Here we use hybrid system conbine of Solar and Wind Energy.

Introduction to Solar Energy

- Solar Energy is available freely and it is cleanest form of energy.
- Sun radiations are converted into electric power.
- Unlimited Supply
- No negative Impact

Disadvantages of Solar Energy

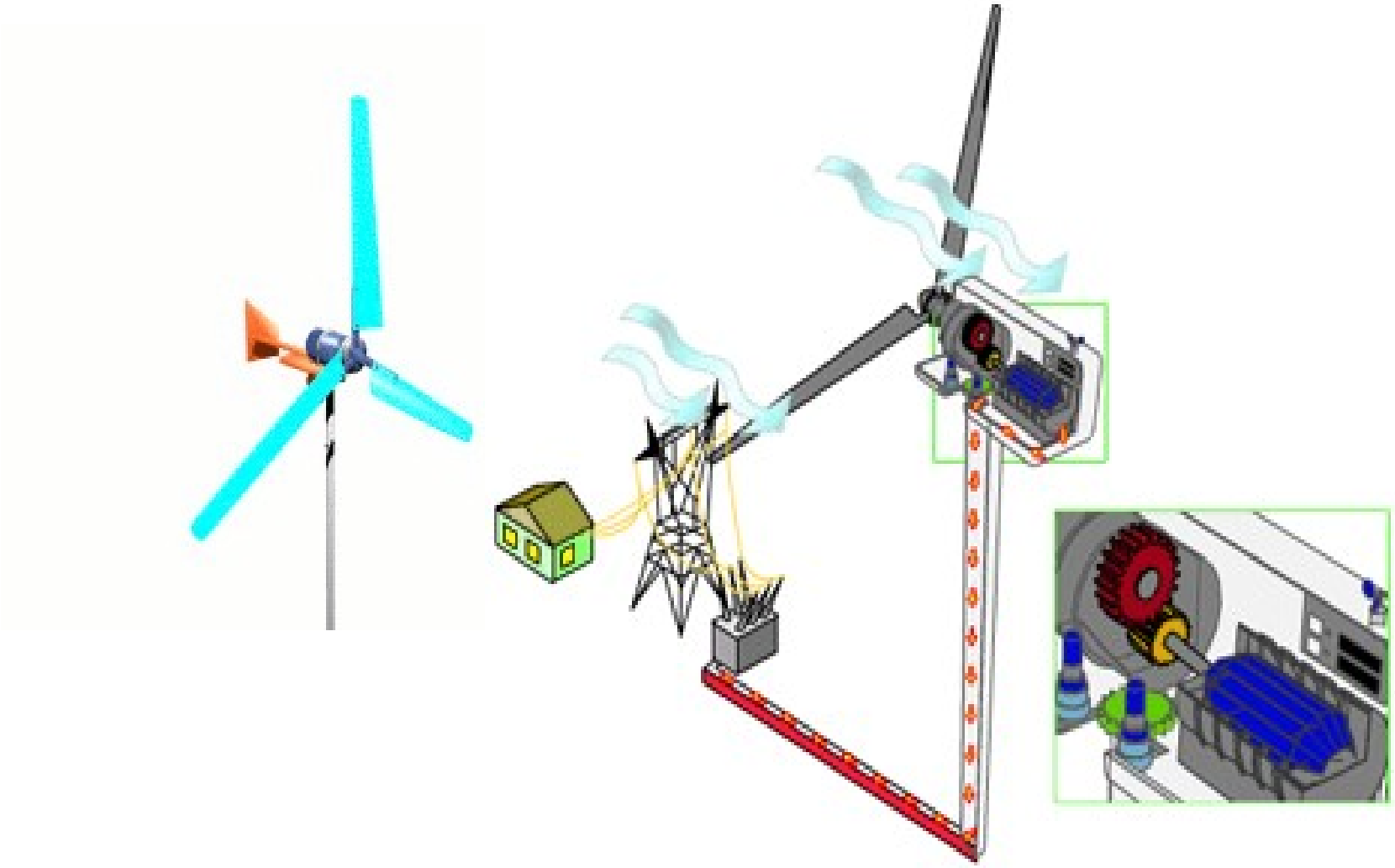
- Solar Energy is present throughout the day but the solar irradiation levels vary due to sun intensity and unpredictable shadows cast by clouds, birds, trees, etc.
- This made the concept of solar energy an unreliable one and less used

Introduction to Wind Energy

- Winds are caused by the uneven heating of the atmosphere by the sun.

- Wind turbines are used to grab this wind to rotate themselves and thus convert the kinetic energy in the wind into mechanical and then to electrical by rotating alternators which are connected internally

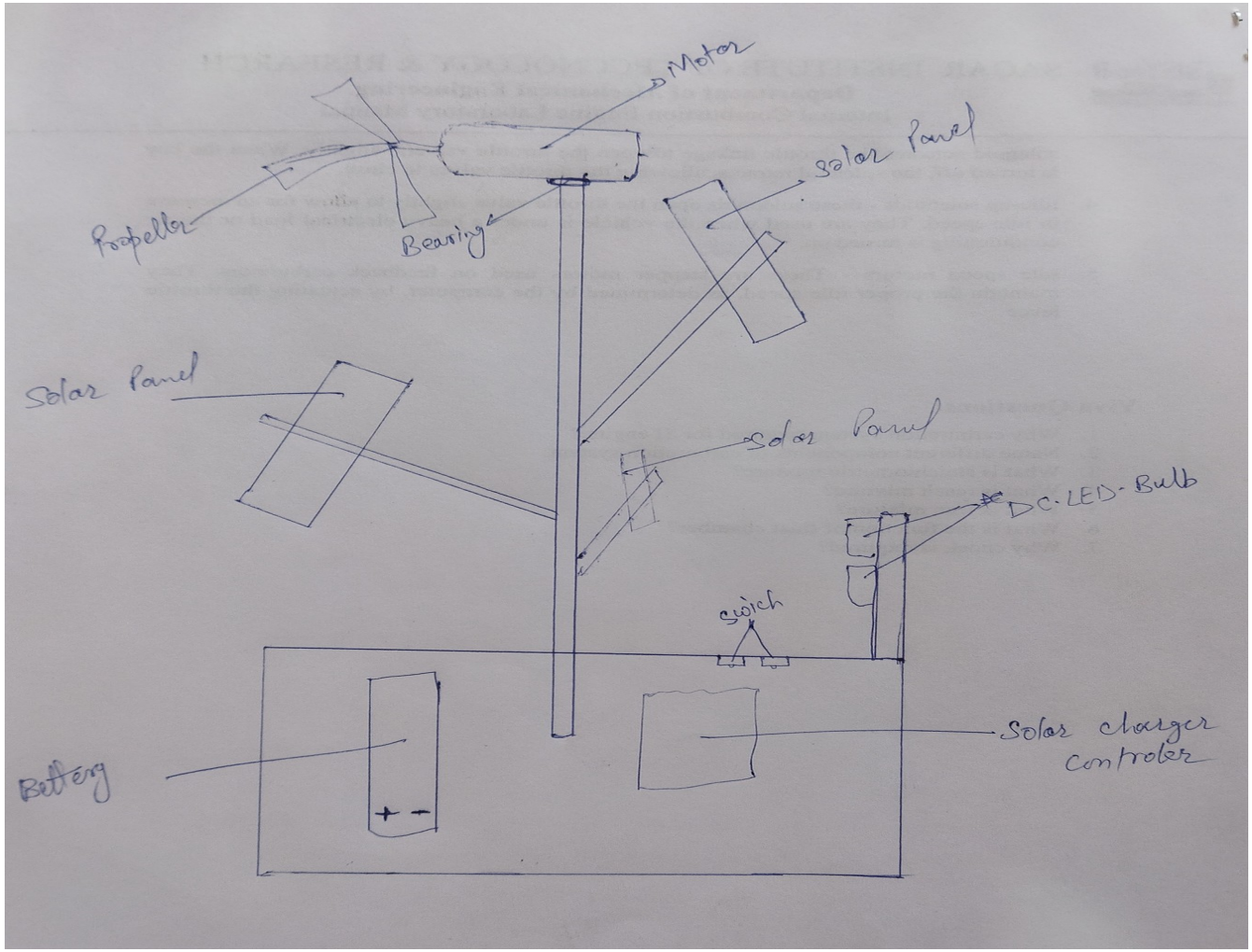
Working of Wind Turbines



Hybrid Wind-Solar Energy System

- The common inherent drawback of wind and photovoltaic systems are their intermittent natures that make them unreliable.
- Sun Energy is available in daytime whereas wind energy is available all the time. In absence of sun energy we can take advantage of wind energy.

Schematic drawing of project



Actual Image of Project

Advantage

- Low operating cost
- Easy to charge.
- Can use in remote areas where continuous power is not available.
- High power quality

Bill of Material

Sr. No.	Material of the project
01	Propeller
02	Dc Moter
03	Bearing
04	Solar panels
05	Wire
06	Battery
07	Dc LED bulb
08	Solar charger Controler
09	Swich

cost estimation of project

The total Cost Estimation of Project is :- 2100

Applications

- Can use to light 2-3 room in small house at remote locations freely.
- Low maintenance cost.
- Freely available energy.
- Easy to installed.

Conclusion

- By combining the two intermittent sources of Wind and Solar the system’s power transfer efficiency and reliability can be improved significantly.

Thank you